Name _____

STUDY GUIDE: CELLS

Note: Also study your labeled diagrams of plant and animals cells (handout and pages 83-85 in book).

1. The smallest, organized unit of living organisms is the _____. A/an _____ is a small structure that performs a specialized function within a cell.

2. _____ coined the term "cells" when looking at cork, and _____ was the first person to use a microscope to view living things.

3. Explain the 3 parts of the cell theory
   -
   -
   -

4. The control center of the cell, which also contains hereditary information, is the _____. Proteins are built at the _____.

5. The jelly-like fluid that holds the organelles in place is the _____. The _____ is bigger in plant cells and stores water. The _____ converts sunlight to glucose.

6. The _____ is a network of channels that transports proteins. The _____ has ribosomes and the _____ does not have ribosomes.

7. The "powerhouse" of the cell, which is important in releasing energy in cell respiration, is the _____. The _____ changes, packages, and releases proteins.

8. Name 2 organelles that are found in plant cells but NOT animal cells.

9. The _____ is responsible for cleaning up the cell and the _____ helps separate chromosomes during cell division. Both are only found in _____ cells.

10. The job of the cell membrane is to _____.
The job of the cell wall is to _____.

11. The biological inheritance of traits from parent to offspring is called _____. The study of heredity is called _____.

12. The unit by which hereditary characteristics are transmitted is called a _____. Different forms of a gene are called _____.

13. A _____ is the physical expression of a trait in an organism. A _____ is the genetic make up of an organism.

14. A _____ allele is the form of a gene that is expressed when present and is represented by a capital letter. A _____ allele is the form of a gene that is not expressed if only one copy is present and is represented with a lowercase letter.

15. An organism with an identical pair of alleles for a trait would be considered _____. An organism with a mixed pair of alleles for a trait would be considered _____.

16. The monk who studied science and was famous for his contributions in genetics was _____.

17. Circle the correct answer in parentheses for each statement:

- "Tt" is an example of a (homozygous dominant, homozygous recessive, heterozygous) genotype.
- "TT" is an example of a (homozygous dominant, homozygous recessive, heterozygous) genotype.
- "tt" is an example of a (homozygous dominant, homozygous recessive, heterozygous) genotype.

18. List all of the genotypes that would produce a tall plant.

19. The purpose of the cell cycle is to _____. The average length of the cell cycle is _____.

20. What 2 types of cells do not divide at all after they have developed? _____ & _____

21. What happens during the S phase of the cell cycle? _____

22. The collective name for the G_1, S, and G_2 phases of the cell cycle is _____.

23. The process during which the cell's nucleus divides, and 2 genetically identical nuclei result is called _____. The division of the cytoplasm occurs during _____.

24. List the 4 phases of mitosis in order:
    A.
    B.
    C.
    D.

25. A mass of similar cells that performs a specific function is a _____. A group of tissues working together to perform a specific function is a/an _____.

Use the following information to answer questions 26-30.

In pea plants, smooth pods (S) are dominant over bumpy pods (s).
Also, green pods (G) are dominant over yellow pods (g).

26. What is the genotype for bumpy AND yellow pods? _____

27. What is the genotype for homozygous smooth pods
    AND homozygous green pods _____

28. What is the phenotype for SsGg? _____

29. What is the phenotype for ssGG? _____

30. Cross 2 plants that are heterozygous for green pods. Show your work with a Punnett square and determine the probabilities for each genotype and phenotype.

♂ _____ X _____ ♀

- Probability offspring has genotype GG:
- Probability offspring has genotype Gg:
- Probability offspring has genotype gg:
- Probability offspring has green pods:
- Probability offspring has yellow pods:
